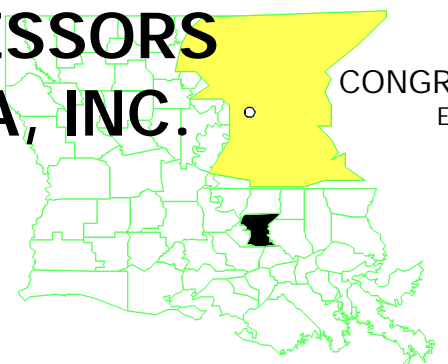


# PETRO-PROCESSORS OF LOUISIANA, INC. LOUISIANA

EPA ID# LAD057482713



**REGION 6**  
**CONGRESSIONAL DISTRICT 06**  
East Baton Rouge Parish

Updated 5/09/97

## Site Description

---

- Location:**
- The Petro Processors Inc. site consists of two locations near Scotlandville, East Baton Rouge Parish, Louisiana, about ten miles north of the City of Baton Rouge.
  - The Scenic Highway Site is located just west of US Highway 61 and north of the intersection of Scenic Highway 964 and US Highway 61.
  - The Brooklawn Site is located about 2 miles west, southwest of the Scenic Site.
- Population:**
- The community is predominantly rural with a few houses located about 800 to 1000 feet from the border of Scenic Highway location.
- Setting:**
- Nearest residence is about 3,000 feet from the site.
  - Nearest drinking water well is 3,000 ft. upgradient of the site.
  - The Petro Processors site is comprised of two former petrochemical disposal areas situated about 1.5 miles apart: the Scenic Highway and Brooklawn areas, totalling 77 acres.
  - Brooklawn is the larger of the two areas, currently estimated at 60 acres. Bayou Baton Rouge meanders around both Scenic and Brooklawn and fingers out into Devil's Swamp.
  - Bayou Baton Rouge historically ran through both Brooklawn and Scenic, but was rerouted during remedial activities at each site.
  - Most of the Brooklawn area was covered by a soil cap, seeded, and contoured to control erosion. In 1994, a full scale treatment facility was constructed to treat contaminated ground water and non-aqueous phase liquids (NAPLs) were recovered. Approximately 98 sumps are in operation at the Brooklawn Site. Of the 193 recovery wells installed to date, about 165 are in operation. Well installation will continue until a total of about 214 are in place.
  - Brooklawn still has one disposal pond which remains partially open ("Lower Lagoon") where drill cuttings are deposited; all other pits and two former ponds ("Upper Lagoon" and "Cypress Swamp") have been filled and covered.
  - The Scenic Site is now covered by a soil cap, seeded, and contoured to control erosion. Eleven (11) recovery wells have been placed to recover NAPLs from the former pit area. Thirty-four (34) monitoring wells have been installed to study natural attenuation of the dissolved plume. Upon completion of the Natural Attenuation Study, a decision may be made to proceed with constructing a hydraulic containment system similar to that employed at Brooklawn or allowing natural attenuation to occur with long term monitoring. Although phase separation modules would be installed, contaminated water would then be pipelined to Brooklawn for treatment with NAPLs shipped over a non-public road connecting Brooklawn and Scenic.
- Hydrology:**
- Portions of both sites are on the Bayou Baton Rouge flood plain.
  - The bayou flood plain at Brooklawn is also on the Mississippi River flood plain; the Mississippi flood plain immediately south of Brooklawn (Devil's Swamp) is a Wetlands.

- Pleistocene terrace deposits are predominately clays, while alluvium deposits are interlayered silty clays and sandy silts.
- The shallow ground water regime is referred to as the -40 MSL zone. The deep ground water regime of concern is the "400-foot sand".
- Receptor analysis modeling has been conducted (and is constantly updated with new information obtained from recovery well installation) to protect the "400-foot sand" at both locations. This effort includes use of MODFLOW and MT3D models.

## Wastes and Volumes

---

- The site's principal pollutants are petrochemical wastes including the following:
  - Chlorinated Hydrocarbons (Hexachlorobutadiene and Hexachlorobenzene are predominant contaminants)
  - Polycyclic Aromatic Hydrocarbons (PAHs)
  - Heavy Metals
  - Oils

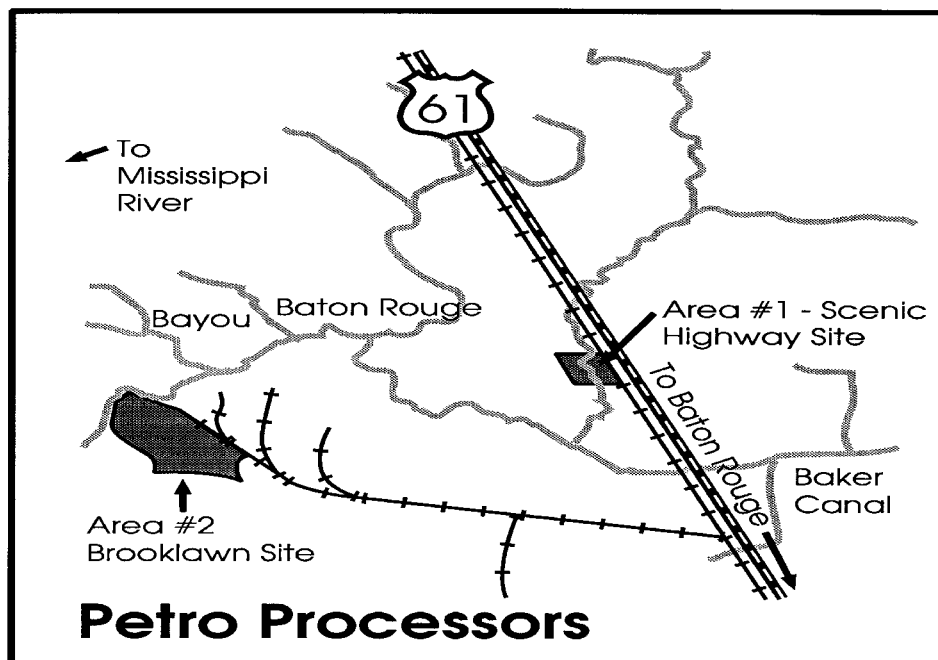
## Site Assessment and Ranking

---

NPL LISTING HISTORY	
Site HRS Score:	41.44
Proposed Date:	9/8/83
Final Date:	9/21/84
NPL Update:	No. 1

## Site Map and Diagram

---



## The Remediation Process

---

### Site History:

- The Scenic Highway Site originated as a borrow pit used for petrochemical waste disposal from 1961-1974. Brooklawn was opened in 1969 to accept petrochemical wastes since the Scenic area was filled to capacity.
- Although filled and closed in 1974, the potential for leachate migration and erosion of the Scenic pit was of concern due to the hazardous constituents contained in the pit. Operations at Brooklawn ceased in 1980, but ponds were left open to the elements.
- In July 1980, the U.S. Department of Justice, the State of Louisiana, the City of Baton Rouge, and the Parish of East Baton Rouge filed suit against Petro Processors, Inc. and several generators which had materials transported to the site. A Consent Decree for site closure was eventually developed with the participation of all parties and court and was entered into the Federal Court's record on February 16, 1984.
- The Consent Decree required the Defendants to investigate, design and implement a conceptual remedial action specified in the Consent Decree. The conceptual remedy generally called for the excavation and solidification of all visible contamination at the site and subsequent placement into an on site landfill with an "appropriate" liner and leachate collection system. Additional elements included the solidification, incineration, or off site disposal of all nonaqueous phase wastes within the lagoons. In addition, recovery wells were to be installed and operated in those areas where free phase organic liquids are present.
- Shortly after the entering of the Consent Decree, the Industry Defendants (through a company they set up known as NPC Services, Inc.) prepared workplans, conducted investigations, and prepared a Remedial Design and Construction Plan which detailed site remediation activities. Unfortunately, during the early phases of construction (late 1987) NPC's air monitoring program detected the release of volatile hazardous substances from the Brooklawn site. NPC determined that vapor emissions were, or could be, generated from several sources.
- NPC subsequently reported in a Supplemental Remedial Action Plan ("SRAP") dated December 1988 that, "After a thorough study of the causes and effects of these releases it was determined that remediation could not continue under the approved plan without causing further releases." Under the terms of the Consent Decree, NPC was then required to examine alternate methods of remediation. The SRAP presents NPC's evaluation of alternate remediation methods.
- The various alternatives investigated by NPC included (1) modification of original closure plan by modifying excavation techniques and deploying typical emission source controls such as foams, water sprays, visqueen and soil covers, (2) in situ volatilization, (3) bioremediation, (4) incineration, (5) solvent extraction, (6) in situ solidification and capping, (7) vapor containment structures and (8) hydraulic containment and recovery. NPC determined that hydraulic recovery and containment was the only technology that could be safely employed at that time due primarily to the potential for vapor emissions problems caused by implementation of the other technologies.

- Upon review, EPA Region 6 rejected the SRAP because it did not contain a sufficiently rigorous evaluation of the alternate technologies. EPA subsequently embarked upon its own review of possible alternative remediation technologies. Upon completion of its eighteen month long study, EPA concluded that two other technologies in addition to hydraulic containment and recovery had merit. These two alternatives included air/steam stripping and in situ soil flushing. However, EPA recognized that these technologies needed to be bench-scale and pilot tested before EPA could argue their merit to the Federal Judge.
- The Federal Judge recognized EPA's concern and ordered Louisiana State University (LSU) to conduct research on the applicability of alternate technologies and to act as his expert witness to resolve technical disputes between the Industry Defendants and EPA. LSU has entered their sixth year of research and is currently conducting onsite tests for injection of Colloidal Gas Aphrons (CGAs) to enhance DNAPL recovery.
- The end result of all the discussions between EPA, the State of Louisiana and the Federal Court, was an amended Consent Decree in 1989 which specified the implementation of hydraulic containment and recovery. NPC subsequently began additional investigation, design and construction activities necessary to implement the new remedy.

#### **Health Considerations:**

- Spontaneous ignition of the waste resulted in fires in the upper lagoon on several occasions.
- In 1969, a spill from the lagoons contaminated portions of a nearby ranch and 30 cattle were killed.
- Site is located over the "400-foot sands", a major drinking water aquifer.

#### **Other Environmental Risks:**

- Lagoons at the Site were located in the Mississippi River flood plain.
- Bayou Baton Rouge flows by both sites and fingers into Devil's Swamp, a Wetlands area adjacent to both Scenic and Brooklawn. This area is used recreationally for hunting and fishing. Currently a State health advisory covers a portion of Devil's Swamp.

## **Record of Decision**

---

<p>Signed: Consent Decree 1984 Amended: Consent Decree 1989</p>
---

- The existing 1984 Consent Decree and 1989 Amendment may be considered a Source Control and Ground water Containment Remedial Action for the Petro Processors Site.
- The SRAP, incorporated by reference into the Consent Decree, calls for a system of about 200 recovery and containment wells at the Brooklawn Site, following capping of the contaminated lagoons. A similar system has been designed for Scenic and will be used if the Natural Attenuation processes occurring at Scenic cannot be quantified and shown to accomplish remedial goals for the ground water beneath the site.

## Community Involvement

---

- Community Involvement Plan: Developed 10/84, revised 01/88, 03/91, and current version 5/91.
- Open houses and workshops: 9/89, 7/90, 1/91, 3/94, 6/94 (Site Tour), 7/94.
- Original Proposed Plan Fact Sheet and Public Meeting: N/A.
- Original ROD Fact Sheet: N/A.
- Milestone Fact Sheets and Site Updates: 07/87 press release; 02/89; 9/89, 10/89, 06/90, 02/91 (common questions answered), 3/91, 9/91, 3/94, 10/94, 11/94, 3/97.
- Citizens on site mailing list: 112
- Constituency Interest: Concerned. Odors, contamination of air, surface and ground water, PRP oversight.
- Site Repository: Reception/guard facility at Brooklawn main operations area.

## Technical Assistance Grant

---

- Availability Notice: None
- Letters of Intent Received:
  - 1) 9/18/90 - Coalition for Community Action (CCA);
  - 2) LOI notice published 10/14/90.
- Final Application Received: 01/23/91
- Grant Award: 09/05/91 to CCA
- Current Status: CCA selected a technical advisor on 7/25/92, and utilized the TAG funds for review of site technical documents. After completing this work the group requested close-out of the grant, which was done in October 1994. No additional grant funds were requested.

## Fiscal and Program Management

---

- **Remedial Project Manager:** Cynthia Kaleri, 214-665-6772, EPA (6SF-LP)
- **State Contact:** Glen Miller (LDEQ)
- **Community Involvement Coordinator:** Verne McFarland, 214-665-6617, EPA (6SF-PO)
- **Attorney:** Jon Weisberg, 214-665-2180, EPA (6SF-DL)
- **State Coordinator:** Joe Massey, 214-665-7408, EPA (6SF-LN)
- **Prime Contractor:** TechLaw - Enforcement Support, EPA  
NPC, Inc. - PRPs' Remedial Company

### Cost Recovery:

- PRPs Identified: 11
- Viable PRPs: Petro Processors of Louisiana, Inc.; U.S. Steel Corp.; Copolymer Rubber and Chemical Corp.; Uniroyal, Inc.; Ethyl Corp.; Dow Chemical Co.; Shell Oil Company, American Hoechst Corp.; Exxon Corp.; Exxon Chemical Co.; Allied Chemical Corp.; Rubicon Chemicals Corporation.
- The Federal judge presiding over this case would not allow cost recovery for oversight of the Consent Decree implementation; past costs expended prior to the Consent Decree were allowed (total equal to \$600,000 per Section 26 of the Consent Decree). Consent Decree entered into the Record on February 17, 1984.

## Present Status and Issues

---

- The existing 1984 Consent Decree and 1989 Amendment may be considered a Source Control and Ground water Containment Remedial Action for the Petro Processors Site. Site boundaries have evolved to encompass all areas where contaminants have migrated and are well defined by Remedial Planning Activities Reports, incorporated by reference into the Consent Decree.
- An air emissions risk assessment was conducted utilizing historical data obtained before the caps were in place. Excess risks calculated were within or less than the risk range established in the NCP for remedial actions at Superfund sites.
- All contaminated source areas at both sites, except the lower lagoon at Brooklawn, are capped. About 98 sumps and 165 wells are currently operational for containment and recovery of NAPLs at Brooklawn (193 wells installed of 214 planned).
- A full scale treatment facility has been constructed at the Brooklawn location to manage contaminated ground water and organics currently being recovered from Brooklawn and those planned to be recovered from Scenic. The treatment scheme includes the following: 1) Phase separate water and organics; 2) air strip contaminated water; 3) incinerate fumes from air strippers and incinerate organic liquids from phase separation units; 4) polish treated water via carbon adsorption; and 5) discharge the water via a National Pollutant Discharge Elimination System (NPDES) permit.
- A trial burn (agency oversight testing of the liquid mode operation of the incinerator) was completed the week of November 7, 1994 and the facility became fully operational. Testing data for the incinerator was validated, compiled, and utilized to conduct a screening level risk assessment which was highly conservative (a "worst case" look) for both indirect and direct exposures associated with the various pathways at and around the Site. All data was evaluated in depth to determine final operating specifications for the incinerator. The final operating specifications and the Screening Level Risk Assessments (both fume-and liquid-mode assessments) were approved by EPA on December 28, 1995.
- With operation of the new facility, plans were also approved for closing out the upper and lower lagoons. A specification for closure of the upper lagoon was approved by EPA on October 14, 1994 and this lagoon is now closed. The lower lagoon will remain partially open to allow disposal of drill cuttings from recovery well installation.
- Approximately 11 wells have been installed at Scenic for recovery of DNAPLs from the former pit area. However, the hydraulic containment system designed for the Scenic Highway Site may not be necessary if natural attenuation of the dissolved plume can be quantified and monitored to ensure remedial goals are being met. Approximately 34 monitoring wells have been installed to study natural attenuation of the dissolved plume. If hydraulic containment is necessary, phase separation modules would be installed and contaminated water would then be pipelined to Brooklawn for treatment. Recovered DNAPLs will be shipped over a non-public road connecting Brooklawn and Scenic.

## Benefits

---

- The rerouting of Bayou Baton Rouge and the engineered clay caps covering the Brooklawn and Scenic Sites have reduced the migration of site contaminants and prevented air emissions from the source areas and exposure to nearby industries and residences.
- The french drain system in Cypress Swamp and the recovery wells at Brooklawn have also helped to control migration of contaminants in the subsurface.
- Construction of the full scale treatment facility, for contaminated ground water and recovered organics, has ensured continued operation of the hydraulic containment and recovery system to the maximum extent practical.
- Continued research by LSU to enhance recovery of organics at the sites will also ensure that remedy implementation is successful to the maximum extent practical, given the site complexities encountered to date.

- Risk Assessment work at the site (air risk assessment completed, indirect risk assessment for incinerator completed, and ongoing ecological and human health assessments for the surrounding wetlands environment) will help ensure that technologies being implemented are protective of human health and the environment.